YAMAHA
MUSIC SYNTHESIZER
SY55

Putting Samples In Their

Keyboards that play back sampled sounds are nothing new. One that adds extensive sound editing capability, broad musical expression and a versatile built-in sequencer to top-quality samples, however, qualifies as a real breakthrough.

The breakthrough is the Yamaha SY55 Music Synthesizer. It features a voice architecture that allows extensive sample layering and programmable dynamic timbre variation. With the SY55, individual sampled "waves" — either those pre-programmed in ROM or others available via plug-in waveform cards — are building blocks that you arrange and process with a sophisticated dynamic filter system to create sound that's a perfect match for your music. You also have pitch envelope generators, amplitude envelope generators, a range of 34 programmable effects, real-time sound control via a range of controllers, and a wealth of other ways to customize your sound. Add to all this a sophisticated 8-track sequencer, and you have a complete music production workstation as well as an outstanding performance tool.

The SY55 is one digital synthesizer that puts samples in their proper place.

Rather than rigid sounds that limit the musical outcome, the SY55's samples are flexible tools that the musician can shape, color and combine to create an original world of sound.

Place

- Second-generation 16-bit AWM2 (Advanced Wave Memory) technology for superior sound.
- Versatile 1, 2, or 4-element voice architecture and complex envelope generators for extensive sample layering capability.
- Sophisticated dynamic filter system offers unlimited real-time timbre variation.
- 74 waveform samples in ROM.
- 64 preset voices in ROM.
- 64-voice internal RAM memory.
- External waveform and voice card slots.
- Multi-play mode allows independent control of up to 16 voices.
- 16 memory locations for multi-play setups.
- Drum-set voices allow 61 different drum and other waveforms to be assigned to different keys.
- Sophisticated built-in 8-track sequencer takes full advantage of the multi-play mode and drum-set voices.
- Velocity switching for expressive power.
- Extensive voice editing functions.
- Keyboard initial and after touch response.
- A range of controllers: pitch wheel, modulation wheel, breath controller jack, foot volume jack, sustain switch jack.
- 34 high-quality programmable digital effects built in.
- Stereo output.

AWM2: The Basic Technology Refined for Superior Sound

AWM2 — second-generation 16-bit Advanced Wave Memory — takes the musical reproduction of digitally sampled sound to new levels of performance. Technically speaking, the system deals with 16-bit wave data sampled at 32 or 48 kilohertz, 24-bit internal signal processing, and high-resolution 22-bit digital-to-analog converters. In terms of sound, the result rivals and often surpasses the quality of the finest compact disc players, giving you unprecedented clarity and realism in the reproduction of acoustic instruments and other natural timbres.

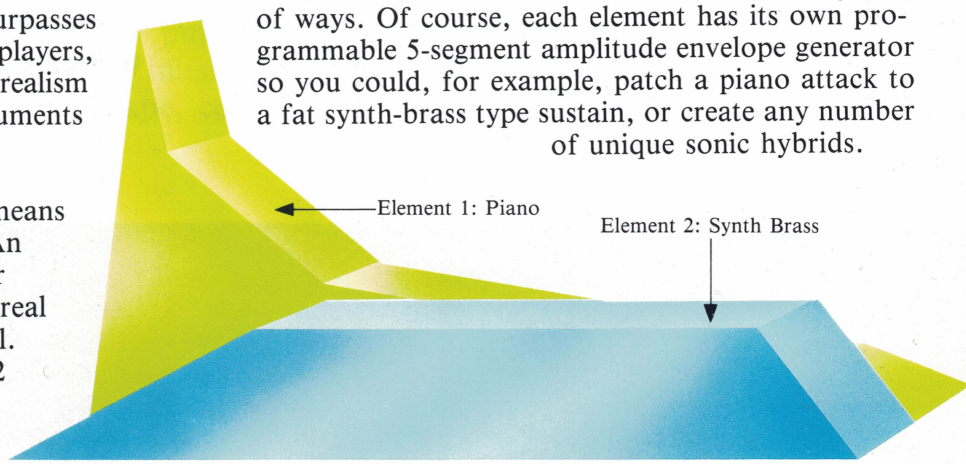
Unlike many sampled-waveform instruments, however, you're by no means "stuck" with the sampled sound. An extraordinarily versatile digital filter system lets you shape the sound in real time for extended expressive control. The SY55 packs a very impressive 2 megabytes of sampled waveform ROM, so you have a choice of 74 individual waveforms built in. External wave cards provide virtually unlimited potential for expansion.

SY55 Preset Wave List

1	Piano	26	Popping	51	Bottle
2	E.Piano1	27	WoodBass	52	Tuba
3	E.Piano2	28	Syn Bass	53	Vocal Ga
4	E.Piano3	29	Violin	54	Bamboo
5	E.Piano4	30	Strings	55	Noise
6	E.Piano5	31	Chorus	56	Styroll
7	E.Piano6	32	Itopia	57	Bulb
8	E.Piano7	33	Vibe	58	Bell Mix
9	Harpsi	34	Marimba	59	BD 1
10	Organ 1	35	Glocken	60	BD 2
11	Organ 2	36	Shamisen	61	BD 3
12	Pipe	37	Harp	62	SD 1
13	Trumpet	38	Mtl Reed	63	SD 2
14	Mute Tp	39	Saw	64	SD 3
15	Trombone	40	Digital1	65	Rim
16	Flugel	41	Digital2	66	Tom 1
17	Sax	42	Digital3	67	Tom 2
18	Flute	43	Pulse 10	68	HHclosed
19	Brass	44	Pulse 25	69	HH open
20	SynBrass	45	Pulse 50	70	Crash
21	GtrSteel	46	Tri	71	Ride
22	Gtr Gut	47	Voice	72	Claps
23	12string	48	Piano Np	73	Cowbell
24	E. Guitar	49	EPiano Np	74	Shaker
25	E. Bass	50	Vibe Np		

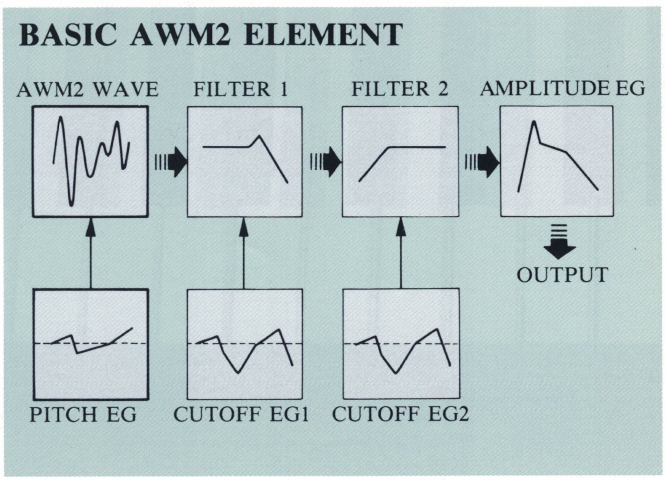
A New Concept in Voice Architecture

Each SY55 voice is composed of one, two or four "elements." Each element can be assigned an AWM2 waveform from the 74 provided in internal ROM, or others available on plug-in waveform cards. You can have a single element voice that uses only a single wave-form, or multi-element voices that combine two or four different waveforms in a number of ways. Of course, each element has its own programmable 5-segment amplitude envelope generator so you could, for example, patch a piano attack to a fat synth-brass type sustain, or create any number of unique sonic hybrids.



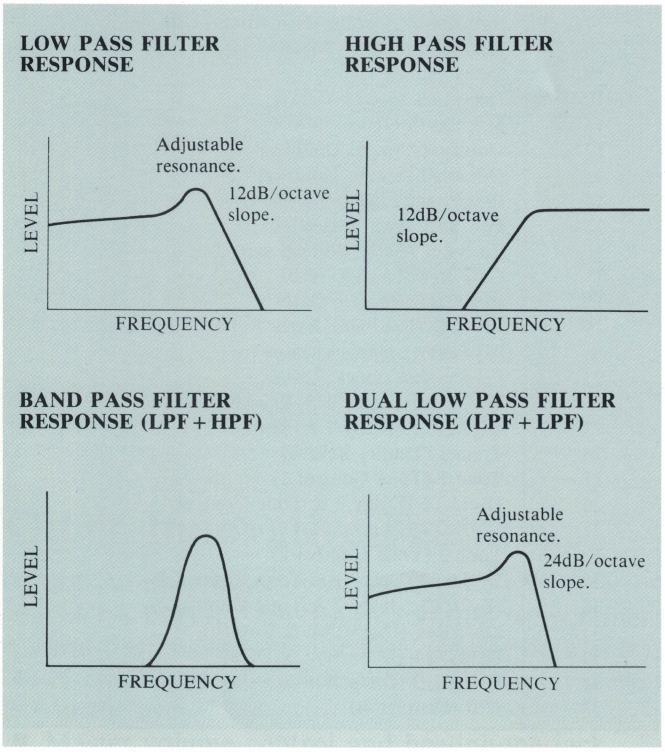
Layered elements in a 2-element voice. 4-element voices allow even greater complexity.

In addition to "layering" the elements in this way, each element can be assigned to a different section of the keyboard for exotic split keyboard setups. Each element also has a pitch envelope generator and two filter cutoff envelope generators that control the SY55's innovative digital filter system.



Advanced Digital Filters for All-new Dynamic Timbre Control

Each SY55 voice element features two digital filters. One is a low-pass type, and the other is switchable for either low-pass or high-pass response. Each filter has its own 6-segment envelope generator so that a virtually unlimited range of dynamic filtering patterns can be produced. Low-pass and high-pass filters can be combined to create a bandpass response, or both filters can be set for low-pass operation — each with a rolloff slope of 12-dB/octave — to produce a steep 24-dB/octave low-pass curve. And, for those of you who miss the distinct musical personality of analog synthesizer type filters, the SY55 filters even have a resonance parameter that allows you to boost their cutoff-frequency peak all the way into oscillation if you like.
To sum up, in a four-element voice with two filters per element, you have a total of eight filters working all at once.



Extensive Voice Editing Functions

In addition to the envelope generators and filters we've already mentioned, the SY55 offers an extensive range of voice editing functions that give you total control of your sound. For each element in any voice you can control volume, note shift, detuning, high and low note limits, high and low velocity limits for velocity-switched keyboard dynamics, pan position, LFO modulation, controller assignments and more. The SY55 lets you mold and shape your sound until it fits the music perfectly. What's more, all editing functions can be easily accessed either sequentially, or directly via a numeric keypad and job-number access system. The SY55 comes with 64 preset voices in ROM, or you can create your own from scratch, starting with the bare waveforms provided in the SY55 ROM or others available via external waveform cards. Your sonic creations can be stored in any of the SY55's 64 internal memory locations, or on external voice cards.

Superior Playability and Vast Expressive Power

The most stunning sound in the world doesn't mean a thing if you can't make it say what you feel. The SY55 puts you directly in touch with your sound via sophisticated control capability. The keyboard is both initial and after-touch sensitive, and the standard pitch and modulation wheels provide familiar expression control. You can also assign the modulation wheel, foot volume control, breath controller, continuous slider, keyboard aftertouch (or any external MIDI controller) to amplitude modulation, pitch modulation, filter cutoff modulation, direct filter cutoff control, envelope generator bias and volume. There's also after-touch pitch bias capability for truly intimate pitch bend control. And for a totally new type of expression there's velocity switching, which brings different elements into play depending on how hard you play the keys.

A Complete Production System: Multi-play Mode, 8-track Sequencer, and Built-in Drums

In addition to its normal voice play mode, the SY55 features a multi-timbre mode in which up to 16 different voices can be assigned to 16 different MIDI channels. Of course, you could use an external MIDI sequence recorder to control the various SY55 voices in this mode, but a versatile internal 8-track sequencer makes external equipment quite unnecessary. 16 memory locations are provided for complete "MULTI" setups including voice-to-channel assignments, individual voice volume, note shift, tuning, panning, and effects.

Voice Number 63 :
Drum Set 1

Key	Wave Name
A#5	Syn Bass
G#5	Syn Bass
F#5	Syn Bass
D#5	Syn Bass
C#5	Syn Bass
A#4	Vocal Ga
G#4	Bell Mix
F#4	Bottle
D#4	Shaker
C#4	Bamboo
A#3	Claps
G#3	Popping
F#3	Tube
D#3	Ride
C#3	Crash
A#2	Crash
G#2	Shaker
F#2	Claps
D#2	Rim
C#2	SD 2
A#1	SD 3
G#1	BD 2
F#1	Tom 2
D#1	BD 3
C#1	BD 2

Key	Wave Name
C6	Syn Bass
B5	Syn Bass
A5	Syn Bass
G5	Syn Bass
F5	Syn Bass
E5	Syn Bass
D5	Syn Bass
C5	Syn Bass
B4	Bulb
A4	Vocal Ga
G4	Bottle
F4	Bottle
E4	Styroll
D4	Ride
C4	Vibe NP
B3	Vibe NP
A3	Claps
G3	Popping
F3	Tube
E3	Tube
D3	Ride
C3	Crash
B2	HH open
A2	HH closed
G2	Cowbell
F2	Tom 1
E2	SD 1
D2	Tom 1
C2	Tom 1
B1	Tom 1
A1	BD 1
G1	Tom 2
F1	Tom 2
E1	Tom 2
D1	BD 3
C1	BD 2

The SY55 even supplies a range of high-quality drum and percussion samples that can be assigned to 61 different keys and handled as a single voice — so you don't need an external drum machine. Your "drum set" doesn't have to consist only of drum samples, though. Any waveform can be used in a drum voice, and any drum waveform can be used in normal voice programming.

The SY55's 8-track sequencer offers all the functions and features you need for serious music production, and directly drives the SY55 multi-play setups. You can record in real-time to capture the spontaneity of a performance, using the step-write mode for precisely-timed fast or complex passages, and using the punch-in feature to "fix" a portion of a previously recorded track. Quantization can tighten up loose timing. Measures can be copied, erased and left blank, deleted and filled with the subsequent measures, or inserted. Tracks can be mixed and erased. There's much more. Sequence data can be stored to external memory cards in the same way as voice data, so you can build up an entire library of your original creations.

Built-in Effects Add Essential Ambience

Yamaha is already firmly established as the leader in digital signal processing for professional music and production applications. The SY55 gives you a healthy helping of this ambience-enhancing capability built in. You have direct access to 34 effect programs including reverb, delay, early reflection, tone control and distortion — all programmable — to give your sound the extra impact it deserves.

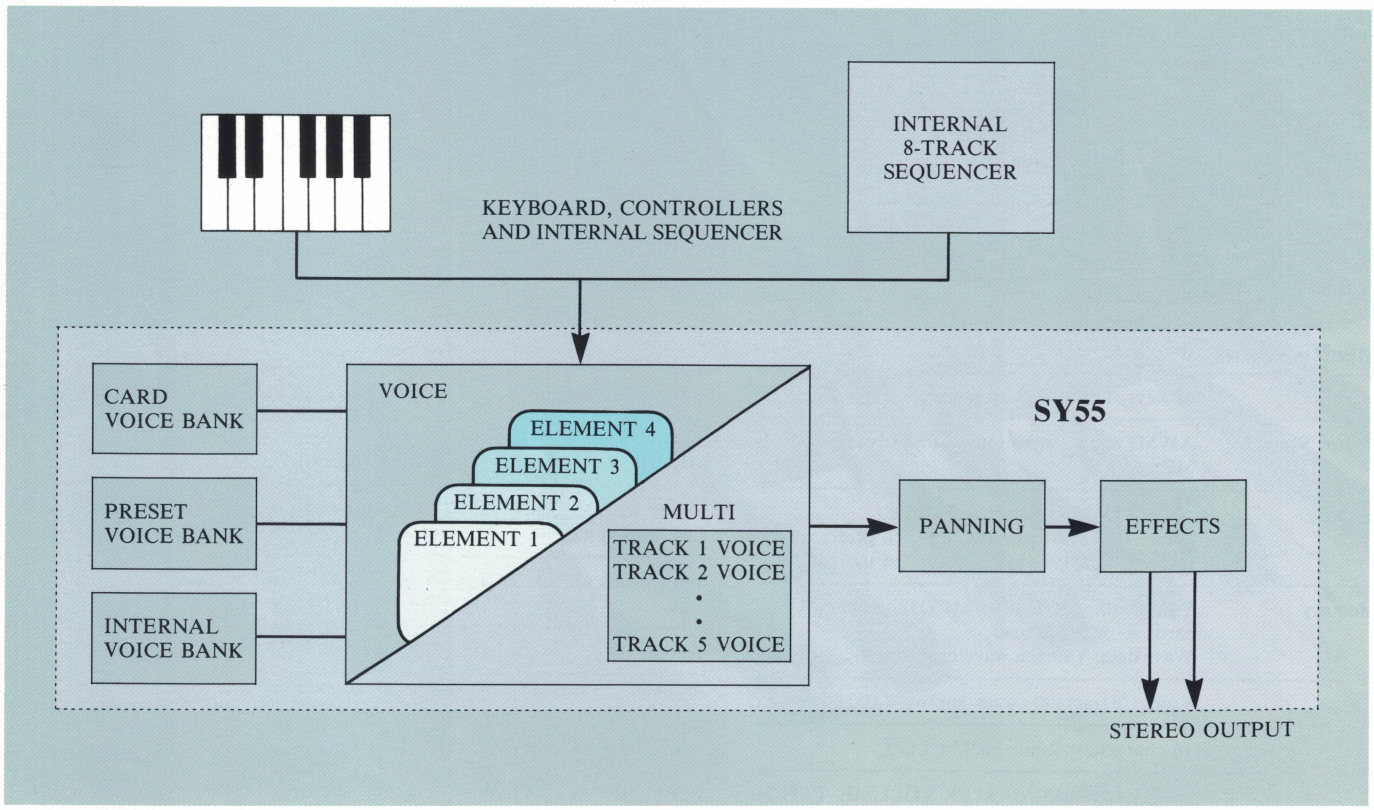
SY55 Effect Programs	
1	Rev.Hall (Reverb Hall)
2	Rev.Room (Reverb Room)
3	RevPlate (Reverb Plate)
4	RevChrch (Reverb Church)
5	Rev.Club (Reverb Club)
6	RevStage (Reverb Stage)
7	BathRoom (Reverb Bath Room)
8	RevMetal (Reverb Metal)
9	Delay (Single Delay)
10	DelayL/R (Stereo Delay)
11	St.Echo (Stereo Echo)
12	Doubler1 (Single Doubler)
13	Doubler2 (Stereo Doubler)
14	PingPong (Ping Pong Delay)
15	Pan Ref. (Pan Reflections)
16	EarlyRef (Early Reflections)
17	Gate Rev (Gate Reverb)
18	Rvs Gate (Reverse Gate)
19	FB E/R (Feedback Early Reflections)
20	FB Gate (Feedback Gate)
21	FB Rvs (Feedback Reverse)
22	Dly1&Rev (Delay 1 & Reverb)
23	Dly2&Rev (Delay 2 & Reverb)
24	Tunnel (Tunnel Reverb)
25	Tone 1 (Tone Control 1)
26	Dly1&T1 (Delay 1 & Tone Control 1)
27	Dly2&T1 (Delay 2 & Tone Control 1)
28	Tone 2 (Tone Control 2)
29	Dly1&T2 (Delay 1 & Tone Control 2)
30	Dly2&T2 (Delay 2 & Tone Control 2)
31	Dist&Rev (Distortion & Reverb)
32	Dst&Dly1 (Distortion & Delay 1)
33	Dst&Dly2 (Distortion & Delay 2)
34	Dist.(Distortion)

Complete MIDI Implementation

Since the SY55 may be asked to perform in any MIDI system, it has been provided with a complete set of MIDI parameters for maximum compatibility and versatility. Of course, the receive channel and device number are programmable, local keyboard control can be turned on or off, and a range of bulk dump functions make data transfers to bulk storage devices quick and easy.

Stereo Output

The SY55's stereo outputs are behind more than just a few stereo effects. Since each element in any voice can be panned to any position in the stereo sound field, you can create true stereo voices that will add a new dimension to your sound. Any of the 61 individual drum sounds in a drum voice can also be placed anywhere in the stereo field, as can individual voices in multi-timbre setups.



Other Innovative Features

- Job-number function access for easy editing.
- DATA ENTRY control in addition to increment and decrement keys for fast, precise data entry.
- 16-character × 2-line backlit LCD display is easy on the eyes.
- Master volume control and headphone jack.
- Built-in demo playback feature.

REAR PANEL

SY55 Voice List

P01	**Piano**	Orthodox acoustic piano.	**P33**	**Thumb Bass**	Play hard for slap bass sound.
P02	**Voyager**	Choir with "sizzle." Play long chords.	**P34**	**SynBadBass**	Funky synth bass.
P03	**Pro55Brass**	Fat analog brass pad.	**P35**	**VCO Bass**	Fat analog bass.
P04	**Elektrodes**	Mellow electric piano.	**P36**	**Violin**	Solo violin with after-touch vibrato.
P05	**Zaratustra**	Big orchestra. Brass volume on MW.	**P37**	**ChamberStr**	Small violin section.
P06	**DawnChorus**	Breathy choir. MW fades out breath.	**P38**	**VCF String**	Analog synth strings. Brightness on MW.
P07	**GX Dream**	A punchy voice reminiscent of the YAMAHA GX1.	**P39**	**Nova Quire**	Choir with a unique attack.
P08	**GrooveKing**	Classic funky, resonant synth voice.	**P40**	**Vibraphone**	Traditional vibraphone with tremolo on MW.
P09	**DistGuitar**	Heavy guitar. Slow fade to feedback.	**P41**	**Takerimba**	Bamboo marimba. Brightness on MW.
P10	**ZenAirBell**	Percussive bell/gong combination.	**P42**	**Glocken**	Glockenspiel Brightness on MW.
P11	**FullString**	Light touch for small, heavy for large string section.	**P43**	**DigiBell**	Spacious synth bell.
P12	**JazzMan**	Split wood bass and trumpet. MW swaps horns.	**P44**	**Oriental**	Oriental orchestra. Light touch for string section only.
P13	**ClassPiano**	Classical Grand Piano.	**P45**	**VCO Lead**	Analog sawtooth lead voice.
P14	**RockPiano**	Fat piano. Perfect for chord work.	**P46**	**Spirit VCF**	Analog synth with big, slow filter sweep.
P15	**DX E.Piano**	Electronic piano.	**P47**	**OZ Lead**	Soft synth lead.
P16	**Hard EP**	Electric piano with sharp attack and hard tone.	**P48**	**Get Lucky**	Fat square-wave synth sound with detune on MW.
P17	**Cry Clav**	Automatic "wah" clav with resonant attack.	**P49**	**Gamma Band**	Oriental percussion ensemble. MW fades in metal drums and bells.
P18	**Funky Clav**	Fat, funky clav.	**P50**	**Metal Reed**	Harmonica or accordion with after-touch pitch bend.
P19	**Deep Organ**	Rock Organ.	**P51**	**Modomatic**	Choir with big MW filter sweep.
P20	**Warm Organ**	Full, rich organ with rotating speaker effect.	**P52**	**DataStream**	Best with long notes.
P21	**Trumpet**	Solo trumpet.	**P53**	**Mystichoir**	Play long chords for shifting notes.
P22	**Stab Brass**	Thin pop brass section.	**P54**	**St.Michael**	Choir with bells on release.
P23	**Big Band**	Big unison horn section. Play in octaves. MW fades to solo trumpet.	**P55**	**Scatter**	Voice on staccato notes, filtered synth on long tones.
P24	**Orch Brass**	Big classical brass section with pan.	**P56**	**Triton**	Best with long chords.
P25	**SynthBrass**	Powerful synth brass pad.	**P57**	**Amazon**	Wide touch range.
P26	**Flute**	Breathy when played hard.	**P58**	**SatinGlass**	Metallic, spacious synth voice.
P27	**Saxophone**	Solo sax with lots of presence.	**P59**	**BrassChime**	Filtered brass with chimes.
P28	**FolkGuitar**	Steel-string acoustic folk guitar.	**P60**	**Piano Mist**	Piano bell. MW fades to staccato filtered voice.
P29	**12 String**	Full 12-string guitar.	**P61**	**Xanadu**	Solo multi-tuned flute.
P30	**MuteGuitar**	Muted electric guitar.	**P62**	**WdBass Duo**	Split wood bass and piano.
P31	**SingleCoil**	Single-coil electric guitar pickup.	**P63**	**Drum set 1**	Drum set including bass and sound effects.
P32	**Pick Bass**	Punchy picked bass.	**P64**	**Drum set 2**	Drum set including bass and sound effects.

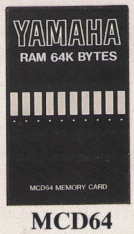
SY55 Specifications

Keyboard	61 keys, initial and after-touch response.
Tone Generator System	AWM2 (2nd-generation 16-bit Advanced Wave Memory).
Internal Memory	Wave ROM: 74 preset waveforms. Preset ROM: 64 preset voices. 16 preset multi. Internal RAM: 64 user voices. 16 user multi.
External Memory	Voice data: MCD64 or MCD32 memory cards — write & read. Wave data: Yamaha waveform cards — read only.
Sequencer	8 songs/8 tracks per song. approx. 8,000 notes max.
Display	16-character × 2-line backlit LCD.
Controls	DATA ENTRY, MASTER VOLUME, PITCH, MODULATION, CLICK VOLUME (sequencer).
Keys & Switches	POWER, INTERNAL, CARD, PRESET, VOICE, MULTI, SEQ, EDIT/COMPARE, UTILITY, STORE/COPY, −1/NO, +1/YES, PAGE −, PAGE +, CURSOR < and >, EXIT, SELECT, ENTER, JOB, NUMERIC 0 — 9, −, |<, <<, >>, RECORD, STOP, RUN.
Output Connectors	PHONES, OUTPUT L/MONO & R, BREATH CONTROLLER, SUSTAIN, FOOT VOLUME.
MIDI Connectors	IN, OUT, THRU.
Power Requirements/ Consumption	US & Canadian models: 120V/15 watts General model: 220—240V/15 watts
Dimensions (W × H × D)	911 × 90 × 325 mm (35-7/8" × 3-1/2" × 12-3/4")
Weight	9.7 kg (21 lbs. 6 oz)

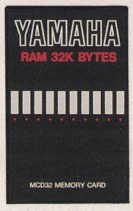
All specifications subject to change without notice.

Optional Memory Cards

Yamaha MCD64 and MCD32 Memory Cards are light and compact, providing convenient external storage for your original SY55 voices and sequences.



MCD64



MCD32

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